

MATERIAL CULTURE

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481 and making almost vertical short cuts to save time and distance.¹ He generally runs when going down hill. He carries no extra clothing while travelling, nor any blankets, simply a small supply of concentrated food in his scrip and what arms and ammunition he can afford, as well as a cane with a spiked tip, generally of European manufacture, on which to steady his rifle while firing. Now that rifles are no longer carried, the cane persists as a walking stick.

NAVIGATION

501 The Riffians and Ghomarans, although both are essentially land peoples, take advantage of their proximity to the sea by constructing vessels and making short voyages in them. The Ghomarans take to the sea more frequently than do the Riffians.

The Riffians and Ghomarans construct two kinds of boat, the *thagharaboth*, or skiff, (see plates 5 and 6) and the *thagharaboth n jkrua'*, or sailboat. The sailless skiff seems to be commonest and is the indigenous type. Sails are supposed to have been taken over from the Arabs, although the geographical position of this coast must certainly have exposed it to contact with sail-using peoples in antiquity.

The skiff is a long narrow craft, usually about twenty feet in length, with bow and stern slightly curving upward. It is not decked over. The sides are equipped with double thole pins, *izhish*, into which are fitted pine or cedar oars, long sweeps, *imkathafen*. It is steered by a primitive steering-oar, *demam*, held against a peg on the right stern.

396 This type of boat is made of cedar or pine, all hand-adzed, and caulked with tar, thickly smeared all over the hull so as to make the entire boat black in color. Pegs are used along the keel and gunwales; in order to strengthen the hull the planks are tied together with ropes through holes drilled near their edges and well plugged with hemp and tar.

[531] The design on the boats is a simple right-angled zigzag in red paint, running horizontally near the bow. There is no trace of an eye motif on the bow, unless this be one.

501 Skiffs are used everywhere along the coast, but sailboats are employed less commonly and only at the better harbors. There is a single mast, called *sari*; the sail, *er krue'*, has no boom, but is attached to the mast by a long diagonal spar in felucca rig.

501 Skiffs are used in fishing with a net, and sailboats for fishing in the deep sea with hooks. 226 The sailboats are likewise used for what slight coastal trade exists, and for carrying eggs and other products to Tangier and Gibraltar.

396 Shipbuilding was carried on, until the recent war, at the ports of Mtiwa and Ghomara, where cedar and pine were available near the shore. Since the war this shipbuilding has ceased, and the sailors buy second-hand European boats to replace those which they lose or discard. 439 There are still plenty of native-built boats along the coast, but another ten years will probably see the last of them.

AGRICULTURE AND THE GATHERING OF WILD PLANTS

241 Agriculture is the most important trait of Riffian life and culture. It is the basis of existence, and is worthy of intensive study, especially by economic botanists. The anthropologist untrained in economic botany can at best merely record the external and economic factors, while the botanist may trace the origins and successions of the plants used and cultivated.

¹ The winner of the most recent Olympic Marathon was a Riffian, el Wafi, of the Beni Urriaghel.

CHAPTER V

MATERIAL CULTURE (CONTINUED)

METAL WORK

326 METAL workers may be divided into three classes: ironworkers or blacksmiths, who are subjected to social restrictions, Jews, and gunsmiths.

325 None of these metal workers know the art of extracting metals from their ores — all the raw material used in the Rif, Senhaja, and Ghomara in recent times has been brought in from outside.¹ Thus, using smelting as the criterion, one might say that these people are not in an age of metal, despite the fact that they use metal tools exclusively. This observation is doubly true when one considers that all the metal workers, except the gunsmiths, are counted as outsiders and immigrants.

325 177 The blacksmiths use double bellows of goat-skin bags, which they work up and down with sticks. These bellows, called *tahanut*, must not be confused with the *arrabos*, the bellows of European fireplace type now made in Taghruth and copied from those made in Meknes and Fez. The blacksmith works over a charcoal fire, quickened by means of these bellows: he heats his metal until it is red hot and then forges it on an anvil, called *er minabath*, which consists merely of an iron stake driven into the ground (unless he has had the good fortune to buy a European anvil). All iron is forged, none is cast; in fact, the only metal melted and cast is lead, used for bullets. The Rifian smiths are, however, able to perform one feat of considerable difficulty; they weld steel edges into soft iron implements, an art unknown, I believe, to the Negroes of Central Africa, from whom, judging by tradition, the physical type of the smiths, and the types of implements, modern North African metallurgy was borrowed. The Vandals, according to Procopius,² are supposed to have shown the North Africans the secret of steel-working, whence the smiths may have obtained this technique, if they did not obtain it later from Jews or Arabs.

326 412 439 The blacksmiths make hoes, sickles, ploughshares, pruning knives, knives, shears, scissors, axes, adzes, chisels, hammers, and horseshoes. Such tools as files, vises, saws, planes, awls, needles, and pincers they import.

325 412 Hoes, sickles, adzes, and axes were formerly so made that they could be hafted only to shafts which bent at right angles; in other words, the hafting superficially resembled a Bronze Age technique, especially since the end of such a tool away from the cutting edge was equipped with a socket for the reception of the end of the hafting. In order to make this socket, the implement was constructed as follows: a flat square sheet of iron was ham-

¹ Marmol (chaps. 41, 43, 46) states that iron was extracted in the neighborhood of Melilla and of Mageo, as well as in Beni Said. The first two sites were probably worked, or at least directed, by townspeople, who were not, according to Marmol's own accounts, native Berbers in blood. In Beni Said the mining operations were well organized, and merchants came from as far as Fez to buy iron balls, from which the tools Berbers use were made.

The excellence of the organization of this extinct industry in Beni Said may have been due to Arab or some other non-Rifian inspiration. At the time Marmol wrote the eastern Rif was much more open to outside influences than it has been in later centuries.

² Marcus, p. 217 (from Cassiod. Varior. v. 1, Victor Vitensis I, 10).

[p. 64]

326
563 rings, and bracelets. Formerly they did not dare peddle their wares far from home, but sold them to Riffian hawkers who took them to the inland markets.

326 The third class of metal workers, the gunsmiths, is for the most part concentrated in Taghsuth, although native gunsmiths are found in many of the Riffian tribes. Most of the latter have learned their trade at Taghsuth or in Arab towns.

326
411 Tradition says that the Riffians first obtained metal pipes, suitable for use as musket barrels, in an archaeological deposit at Bades, and that these pipes were peddled all over the Rif. Later, when the pipes are said to have been exhausted, similar ones were obtained from Ceuta and the Peñon de Velez. The gunsmiths make all the other parts of the gun themselves: they bore the priming hole and make the lock, springs, trigger, pan, and the hammer which holds the flint. The stock, which they make from local wood, they decorate with inlaid wire and with ivory, which is exceedingly rare and valuable. The flints, which are sold in all the markets, are made at Khebaba and by the Asht Aziman of Beni Tusin.

[531] Many of the flints, however, are probably imported from England, as are some of the locks, which bear in many cases the royal insignia of Great Britain.

MANUFACTURE OF GUNPOWDER

389 The blending of gunpowder from its three ingredients, although carried on as a side occupation throughout the Rif, Senhaja, and Ghomara, was, before the Spanish occupation, the exclusive trade of one half of the Beni Mesduy. These craftsmen supplied the rest of the Rif with much of their explosive material, and since the consumption of gunpowder in the Rif, both as a festive gesture and for purposes of warfare, was tremendous, the craftsmen of Beni Mesduy were kept constantly busy supplying the demands made upon them.

[434] Of the three component elements, sulphur and saltpeter were imported and sold in all markets; charcoal was manufactured locally.

PREPARATION AND WORKING OF LEATHER

281 Tanning, practiced throughout the Rif, Senhaja, and Ghomara, is a process consisting of a long sequence of actions. The rawhide stripped from the animal is first rubbed with wet ashes, which are left on until the hair is ready to come off; it is then given a rubbing with crushed *toide* bark and water, which is allowed to stay on it for several days; crushed juniper berries are next rubbed into it, after which it is soaked in sour milk; it is then given another treatment with wet ashes, and is finally washed, often by being immersed in a stream.

[445] Leather so tanned is used in the manufacture of srips, belts, parts of ploughs, covers to butter-jugs, amulet covers, and other objects. It is sewn, generally with strips of leather rather than with thread, by means of carpet needles imported from Fez and Melilla.

[386] Leather is colored by the same dyes and the same methods employed in the dyeing of textiles.

Leatherworking is at present concentrated in the tribe of Taghsuth, where cartridge belts and srips of characteristic type are produced. (See plate 16.) These articles will be fully discussed under the subject of clothing.¹

¹ See below, p. 81.

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285 Hamara of the Gzennaya; Bokoya; Ijaonen of Beni Amart; Beni Hadifa and Ajdir of Beni
 415 Urriaghel; Sidi Bu Daud of Temsaman; the Metalsa dwelling near Beni Mohammed, Beni
 Uliashk, Tafersit, all the Senhaja and Ghomara, Beni Mesduy, Targuist, and the western
 Maritime tribes.

[314] *Wickerwork*, the third type, is called *asarow n ughanim*. Oleander switches and reeds
 are used, the oleander for the uprights, or warp, and the split reeds woven in and out be-
 tween them. Baskets made of this material are often of great size, four to five feet in di-
 ameter and six feet in height. They are used for the transportation of grapes, figs, almonds,
 walnuts, and the like, and for the storage of raisins, dried figs, and dried apricots. (See
 plate 24.) They are to be found in Iherrassen, Ikhuane, Ulad Alu ben Aissa, Ikaroen,
 Temjunt, Bured, all of Gzennaya, Mountain Urriaghel, Taghzuth n Tassa and Tizera n
 Imziwen of Beni Tusin, Beni Amart, Bu Adl, Beni Koraa, and Ain Mediuna of the Eastern
 Arabophone Senhaja, and Beni Bu Shibet.

TEXTILES

286 Textiles made in the Rif are confined to woolen cloths, all cotton and what little silk
 [439] there is being imported.

283 The first process in textile manufacture is washing the wool in a stream with the boiled
 [124] roots of the plant known as *thaghigheshth*. The wool is hung up in the rafters of the house
 until dry, and is then carded. In the old days, cards of local manufacture, called *ikarthashen*,
 were employed, but today the cards used throughout the Rif are imported from Sheshawen
 and are of European type. The indigenous type consists of a long wooden handle about two
 feet in length, with a flat piece of cow's horn attached to one end. Into the horn are set two
 parallel rows of spikes, either wooden or brass, about the length of a human finger. The
 rows are set at right angles to the axis of the handle, and the spikes project from the handle
 at a right angle. These cards were kept in pairs, and when not in use were pushed up into
 the rafters, where, in old houses, a few of them may still be found.

Spinning, the next process after carding, is done in two ways:

1. The thread is suspended from a distaff, on which the rove is wound, and attached to
 a spindle-whorl held just off the ground. Thread spun in this way is used for warp and is
 called *asarau*.

2. The rove is spun on the thigh and gathered into a pot below. This thread is used for
 weft and is called *amshin*.

286 Weaving, the final process of textile manufacture, is done on two entirely different kinds
 of loom under different circumstances. The more primitive is the *asta*, an upright two-bar
 loom with a stick heddle and a wooden comb for battening the warp. The operation of the
 [869] *asta* is entirely in the hands of women. A girl who does not know how to weave on the *asta*
 has a poor chance of marriage, and consequently girls learn this art at an early age. Parties
 are held for the teaching of it; a girl who is not expert invites a number of skilled weavers,
 who go to her house, eat, and instruct her. The cloth produced by the *asta* is called *tadsha*
 and is used for women's clothes, men's sleeveless shirts worn in winter, and blankets. It is
 generally white, sometimes with red horizontal bands or stripes. The *asta* is employed
 throughout the region under consideration, except in the tribes of Beni Bu Yahyi and
 Metalsa.

281 from Taghzuth. The Taghzuthis, who were craftsmen only in powder and firearms, have within the last generation taken over leatherwork and set themselves up as the foremost manufacturers of belts and bags. The Taghzuthi work is characterized by the stitching of narrow strips of colored leather diagonally in rows so as to form lines. These lines are always straight, and the designs produced by them form isosceles triangles and zigzags. Until recently white and green were the only colors employed for this purpose, but since the Spanish occupation other colors have come in, and the work has become coarser. (See plate 27.) Besides the ordinary belts and bags, the Taghzuthis now make wrist-watch straps and handbags, the former for the Spanish army, and the latter to be sent to the ports of the French zone and thence to America, and, to a lesser extent, to England and France.

Other old centers of the manufacture of bags and belts were Beni Misawr, a sub-tribe of el Khmes of the Western Arabophone Senhaja, and Beni Mohammed, situated between Beni Zerwal and el Khmes. The design on these Jebalan bags is curvilinear rather than rectilinear, and is characterized by three circles side by side on the front. The effect is produced by the stitching of leather strips, as at Taghzuth, and not by silk embroidery, as at Iyarusith of Temsaman.

291 **Feminine Attire.** Like men's clothing, the garments of women were formerly made entirely of wool. *thawthai*, the principal garment, consists of a long rectangular piece of woolen cloth. The upper corner of one end is held under the left armpit, with the lower corner falling by the left knee. The cloth is then wrapped around the body, from front to back, until it reaches the front again. A belt holds it together at the waist, and it is caught up back and front by each shoulder and fastened there by wooden pins or brooches. (See plate 26.) These brooches, called *thiaghane*s, are made by Jews in Melilla, in the Jebarna section of the Shawia of Gsennaya, at Bades, and in Beni Bu Frah. The *thiaghane*s consist of a triangular piece of silver or pewter, to which is attached a loose ring of the same material; there is a gap in the ring, through which the point end of the pin, of one piece with the triangle, may pass. To pin cloth together with this device, the ring is turned until the gap coincides with the pin; then the pin is thrust through the material, and the ring pressed beneath it and turned, so that it must stay under the pin. This type of brooch is not confined to the Rif, but is commonly found throughout North Africa.

301 *thaghugat*, the belt, bears the same name as the men's belt, although it is an entirely different object. The old style woman's belt is made of many cords of heavy woolen yarn of different colors caught together, and is locally considered an object of great beauty. This belt is wound around the waist many times, and a long end is left dangling behind. Ghomaran women wear broad belts of native cloth. (See plate 26.) *thaghugat n malagha*, the belt of Malaga, is a long red woolen belt with fringes at the end, manufactured in Spain and sold to the Riffians at Melilla. It is fast supplanting the heavier belt of native manufacture.

Feminine headwear is of two principal varieties:

1. *ifran n thingharin*, or women's braids, consist of long black threads of woolen yarn, which are braided into the hair near where it ends and then downward until they nearly touch the ground. Three of these *ifran* are braided into each braid, and since the women divide their hair into two braids six *ifran* are worn by each woman. The hair, supplemented by these long strands of black wool, may be left trailing or else tied around and around the head like a turban.

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2. *thashumbushth*, a cotton headcloth, tied over the bunched-up hair, is a more recent type of headdress which came in with the introduction of American cotton cloth. (See plate 26.) This cloth is generally white, although red and yellow are occasionally used. In the region where tie-dyeing is practiced a headcloth decorated in this manner is worn. 291

The garments just described, the *thawthat* and *ifran*, were formerly the only garments worn by women, in winter as well as in summer. On exceptionally cold days women might occasionally put on a second *thawthat*, bringing it up over the head like a shawl.

el haik is the Arab haik, or woman's shawl. There is no word for this in the Riffian dialects. It is simply a square piece of cloth worn as a shawl. (See plate 26.) It is to be found in Ghomara, Western Arabophone Senhaja, Senhaja Sghir, Beni Mesduy, Targuist, all Eastern Arabophone Senhaja but Marnissa, Beni Krama, and Branes. *hash*, the men's haik, has been given a Riffian name. This is a light thinly-woven woolen scarf worn around the neck and back of the head, and generally tucked into the neck of the *jellaba* in front. It is considered of Arab origin, and is distributed through Metalsa, Beni Bu Yahyi, Galiya, Kebdana, Beni Said, Temsaman, Beni Ulishk, Tafersit, Beni Tuzin, Shawia and Beni Mohammed of Gzennaya.

Since cotton cloth has come in, women's garments are losing their simple form and becoming tailored. Sleeved shirts, open at the neck and embroidered, are worn with wide trousers like those of the men and the red belts of Malaga. The result is a costume entirely different from that of a few years ago, but more decorative. This type of garment has not yet supplanted the *thawthat*, however, since the old style is still maintained by the older women and by many of the younger ones as well. As with other factors of material culture which depend on European introduction for their diffusion, the pattern of their dissemination seems to be sporadic and voluntary, and without cultural significance. 177 291

The garments of men are tailor-made by *tolba*, or students in the mosque, and women's garments must be made by the women themselves, although often men who have been students and have learned the art of embroidery make and embroider their wives' garments for them. 294

The silk with which embroidery is done is now largely European, and its dyes are not fast. Formerly all the silk used came from Tetwan, and often was not dyed until it arrived in the Rif; hence the dyes, the same as employed on wool and leather, were always fast. The Tetwan silk is still considered superior, but is increasingly difficult to obtain. There is no reason to believe that this native silk was not imported into the Rif in very early times, or since the inception of silk-worm cultivation in Morocco after the advent of the Arabs. El Bekri says that the Meknassa, a group just south of Gzennaya, paid tribute to the king of Nekor in cloth from Merv. 294 439

The designs, the same as those formerly put on the bags and belts of Temsaman, are both curvilinear and rectilinear, the triangular or saw-toothed design predominating. A favorite design is a square capsule, decorated on the inside with sawteeth, and surmounted on the small ends with curved lines reminiscent of the ancient Libyan ostrich plumes. Designs found by Bates to be characteristic of the ancient Libyans are still recognizable in Riffian embroidery.² A favorite design employed on the hoods of *jellabas* and on the cuffs 294 531

¹ El Bekri, p. 157.

² Bates (*The Eastern Libyans*, Pl. III, and pp. 137, 139, 140) gives drawings of similar Libyan designs, mainly in the form of tattoo marks.

175 caidatos of Uṭa, Upper Ghis and Nakūr, this arrangement being the
 176 one which exists today. A far cry from the old *imghāren* of the *Bilād*
 631 *as-Saiba* days, each *qā'id* is now the representative in his caidato of
 the government of S. A: The Khalifa Mūlāy al-Ḥasan in Tetuan.
 Most of the tribal functionaries have already been discussed, but in
 addition there are today in each caidato a *nāẓir al-aḥbās*, who takes
 charge of *ḥabūs* property, owned by most of the cantonal mosques.
 an *abū l-muwārith*, who turns over to the Makhzin the property of
 those Riffians who die intestate, and an *ukil al-ghuyāb*, who handles
 the legal affairs of those of his fellow tribesmen who are not present
 to represent themselves. Considering that about eight thousand men
 go to Algeria to look for temporary employment every year during
 the harvesting season, the last mentioned official has a lot of work
 on his hands. The *qā'ids* and the *qāḍis* each hold their respective
 443 *maḥkāmas* in the principal markets of each caidato: Sūq ath-Thnain
 438 of Aith Ḥadifa in Upper Ghis, Sūq al-Arba' of Turīrth in Nakūr,
 and Sūq as-Sibt of Imzūren in Uṭa.

These weekly markets (*sūq*, pl. *aswāq*), held in the open air, are
 still among the most important of not only Riffian institutions, but
 those of tribal Morocco in general. There are six such markets spread
 throughout the tribe: the Sunday market at Thamāsīnd, the Monday
 markets at Aith Bū 'Ayyāsh (Izakīren) and Aith Ḥadifa, the Wed-
 nesday market at Turīrth, the Thursday market of Imrābdhen, and
 the Saturday market of Imzūren, formerly the Wednesday market
 of Sidī Bū Afif. These markets are so situated that any tribesman
 can go to them, do his business and return, all in the same day. They
 serve not only for the circulation of local products (animals, grains,
 vegetables, fruits, eggs, butter, poultry, meat, milk hides, wool, salt,
 charcoal), but also as places of exchange for the fruit of local industry
 (plows, winnowing forks, wooden shovels, wooden pestles, stone hand
 mills of the rotary quern type, homemade rugs and other wool
 objects, mats, handmade pottery, and the esparto grass sandals so
 characteristic of the Central Rif). In addition, the markets act as
 443 clearing houses for leather goods made in Tetuan and Tāghzūth (ba-
 439 bushes, srips and harness) and for objects of all kinds imported from
 Spain and from French Morocco: sugar, tea, soap, spices, henna,
 matches, candles, nails, thread, glassware, and bolts of brightly colo-

red cloth and silk to be tailored into shirts for the women. These European articles are all sold by itinerant vendors who go from market to market setting up their white canvas tents to transact the business of the day. In the Wednesday market at Turirth I saw one merchant who even displayed a row of balloons.

As may readily be imagined, the market is a beehive of activity except during the month of Ramadān, when it is at best only half full. Beside the entrance is a row of market buses and just within it a few *Imširen* may be seen plying their trades of blacksmithing and ironworking to the accompaniment of the clanging of hammers upon anvils; they are special people from Aith Tuzin who form an endogamous class of socially inferior status. The tribespeople, from Aith Tuzin or Tamsamān or Giznāya or Bani Yattuft (according to the location of the particular market under consideration) as well as from Aith Wuryāghil, filter in in groups, unload their mules and donkeys in the funduq, and start to seek customers for their produce. Although a country boy, the Wuryāghli is a hard man to swindle, and his itching trigger finger was responsible in the past for turning many a market into a battleground («breaking» the market, in local parlance), despite the fact that markets, like saints' tombs, are considered inviolable and sacred territory, and that, as we have seen, the fine for killing a man in a market was doubled.

In one corner of the market a tribesman is showing the teeth of his mule to a prospective buyer, while in another is the meat market, where a throng of people stand making a bid for a goat, sheep or ox, the carcass of which may be seen suspended from a hook in the roof; just behind it is the *gūrna* or slaughterhouse, where the butchers slit the throats of their charges in the traditional sacrificial manner, under the vigilant eye of a Spanish veterinarian. In the center a group of old women are assembled; they are selling eggs, poultry, bread and handmade pots with a light brown slip and black, painted geometric designs. In the Saturday market at Imzūren the women who sell pottery are mostly negresses from the *thārfiqh* of Isimghān («Blacks», sing. *asmigh*) of Aith 'Alī u 'Aisā in Ajdīr, formerly a client family of the Aith Hājj 'Abd al-Karīm (no kin to the ex-Rif-fian leader); to the anthropologist, this purely negro group seems to live just like the Riffians around them, and, although they are

443 province of Mader, where barley is relatively cheap, in order
442 to sell in the Rif, which seldom produces enough to meet local
438 needs. The barley is stacked in huge piles of loose, unground
seed which is purchased in relatively small lots to be taken
back to the mountains and ground for bread or left in seed
form to feed the livestock. The barley is measured and
(565) weighed by a member of the imziren class, who loudly cries
out the current price of barley in the market. The merchants
themselves sit under nearby shade trees, accepting the coins
from their criers and listening to the competition.

442 In addition to these large-scale sellers, there are the
439 large-scale buyers, who resemble the large-scale sellers in
all particulars except their immediate function in the market.
Among this group are the egg merchants who buy the tiny lots
of a myriad fellah in order to transport them to the urban
centers of Tetuan or Fez. Another group of buyers are the
almond merchants who purchase the Riffian's supply to market
abroad, usually in France, to cosmetic companies which trans-
form them into face oils and hand lotions. There are also
(245) merchants of oranges who supply the canned juice industry,
(262) and grape buyers who purchase the indigenous supply (used
locally by the Berbers as a winter reserve in the form of
raisins) for the wine industry located in central Morocco.

137 by burning, may completely destroy the oaks. The Mamora cork forest north of Rabat (137,000 hectares) is the largest in the world.² Cork oak covers about 100,000 hectares in the northern zone.³

314 Much of the economic activity in northern Morocco is concerned with the collection and shipment of cork. The bark of the trunk and the larger branches is utilized. Cork is first removed when trees are about twenty years old, with subsequent stripping every seven to ten years. The first yield (*liège mâle*) is very rough and coarse and of little value. Cork of subsequent stripping (*liège de reproduction*) is more homogeneous and of higher commercial value. In northern Morocco, cork is collected by Spanish concerns with native labor, and also by small independent operators who collect cork from isolated villages and carry it to places of deposit on the main roads. Most of the cork from northern Morocco is shipped in bulk to Spain.

137 Deciduous oaks cover about 7,000 hectares in northern Morocco. Two species are represented, and they have the scattered distribution characteristic of relicts. The larger stand of deciduous oaks grows at an elevation of about 1,000 meters in the mountains west of Shawen and southwest of Bab Taza—Jbil Buhashim, Jbil Sugna, and Jbil Hazana. *Quercus pyrenaica* = *Q. Tozae* is the species in this area; it appears also at elevations of 1,200–2,000 meters on Jbil Tiziran and, as the binomial indicates, in the Pyrenees. The second species, *Q. faginea* = *Q. lusitanica*, is scattered over the Sanhajan highlands. The largest stands are on the slopes between Jbil Tiziran and Jbil Leshab. Other stands appear on the slopes of Adrar Tidighin and Adrar Taghzut, and there are a few trees mixed with *Erica arborea*, *Cistus ladaniferus*, and *Pistacia lentiscus* in the maqui near Tangier.

It is difficult to explain the scattered distribution of the deciduous oaks. They are abundant in the largest forested area (fig. 8), that of the mountains west of Shawen, but many of the trees in this forest were cut by the Spanish for use as railroad ties. Both species seem to be calcifuge, and it is unlikely that either will be found in the drier parts of the zone. The scattered and mountainous distribution suggests that the deciduous oaks are Pleistocene relicts now restricted to the coolest and wettest parts of northern Morocco. The extreme polymorphism of *Quercus faginea*, with its great number of subspecies and races, seems to support this view.

The highest peaks in northern Morocco are clothed with forests of fir and cedar. The former genus is confined to the calcareous mountains east of Shawen. Two species are present: *Abies tzaotana* occurs at elevations of 1,500–1,854 meters on Jbil Tazaot, and *A. pinsapo* appears on Jbil Maggo, Jbil Tisuka, and Jbil Leshab, as well as in the mountains near Ronda in southern Spain. This restricted highland distribution again suggests that these species are relicts. On Jbil Tisuka and Jbil Leshab, forests of fir begin at an elevation of 1,600

(113) ² Estimate of Emberger, *Aperçu général sur la végétation du Maroc*, p. 101. For an excellent description of the Mamora forest see A. Métro and Ch. Sauvage, *Flore des végétaux ligneux de la Mamora* (Rabat: Société des Sciences Naturelles et Physiques du Maroc, 1935).

(113) ³ This figure and the estimates of forested surface in later paragraphs are taken from S. Sánchez Cózar, "Montes," *Conferencias desarrolladas en la Academia de Interventores durante el curso de 1947* (Tetuán: Imprenta del Majzen, 1948), pp. 5–25. Earlier estimates appear in E. González Vázquez, *El Marruecos forestal* (Madrid: Ediciones Técnicas, 1945).

Environment

31

137 by cutting, browsing, or fire. This ability explains the presence of scrub thuya in deforested areas. But it grows slowly and is sensitive to disturbance in its early years. In the area delimited on the map, thuyas are widely scattered and for the most part badly mutilated. Large formations have been completely destroyed. More than half of the houses in the eastern part of the Rif have (313) rafters of thuya, which is used, wherever it grows, as a source of charcoal. The (314) Barbary thuya has been used for centuries in making cabinets and other furniture, and was esteemed by the Romans for roofing temples.²¹ (322) Damaged trunks sometimes develop giant burls, which have been used since classical time as table (314) tops. A hard resin, sandarac, exudes from the trunks, and a modest quantity (439) of it is shipped to Britain, where it is used in the manufacture of varnish.²²

²¹ Pliny, *Natural History*, XVI. 231, XXXIII, 146.

(113) ²² W. Dallimore and A. Bruce Jackson, *A Handbook of Coniferae* (London: Edward Arnold, 1948), p. 610.

R 90

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226 more important at that time than it is today. In chapter vii evidence will be pre-
171 sented to show that the same coastal area was once an important center of ship-
building.

5
[226] Fresh-water fishing seems to be restricted to a few streams in the mountains
[824] of Ghmara and Sanhaja as-Srair. The Sanhajans make use of the toxic roots of
[171] *Daphne Gnidium* (Arabic *mat'nan*) to stun fish, a practice that has been observed
also in Sardinia, Portugal, and Spain."

UTILIZATION OF WILD PLANTS

R
757 The average Moroccan woman can identify at least a hundred plants, and many
824 are thought to have medicinal or magical qualities. To cure an ear infection, the
171 ear is plugged with a mixture of butter and the ground leaves of *Ruta Montana*.
The cure for a cold is to induce sweating by drinking milk or tea heavily seasoned
with *Mentha pulegium*. A wound is cleaned with the leaves of *Inula viscosa*, and
the leaves of other plants are worn under headgear to cure or prevent headaches,
or in slippers to reduce fatigue. The number of similar ideas is limitless.

R
222 Many wild plants have food value, and are collected even when regular har-
262 vests are bountiful. The list of such foods includes the seeds of several species of
171 *Cistus* (*C. albidus*, *C. laurifolius*, *C. ladaniferus*), the sweet acorn of *Quercus Ilex*,
[137] the fruit of *Arbutus Unedo*, the roots of *Halimium lasiocalycinum*, and the berries
of *Rubus ulmifolius* and *Crataegus laciniata*. Moroccans eat the bud of the palmetto.
Acorns and *Cistus* seeds seem to be the most important famine foods.

MARKETS

R
484 It would be a mistake to conclude that rural communities in northern Morocco
171 live in complete isolation. Moroccans are fond of travel, and the men, at least,
have some time to satisfy their wanderlust each year. There are few men, even
in the remote highlands, who have not visited at least one city. But when a Rifian
or Sanhajan sets out for Fez or Tetuán he is likely to be more interested in sight-
seeing than in shopping. He may bring back a new cloak for himself or a piece
of costume jewelry for his wife, but more often returns only with accounts of
strange sights and tales of adventure.

R
438 A rudimentary system of trade does exist. A few manufactured articles are
439 found in most homes, and some communities produce marketable goods. For ex-
171 ample, the village of Mediuna, just south of Cape Spartel, is engaged in quarry-
ing millstones from the Caves of Hercules." Here they find a gritty conglomerate
that is ideal for milling. The *m'allimin* (masters) who hew out these stones trans-
port them on muleback to Tangier, whence they are traded throughout northern
Morocco. Rifian women spend some time making pottery. During the idle months
of winter, after the cereals have been harvested, Rifian men work on mats and
baskets. Leatherwork is done at Taghzut, and winnowing forks are made at
Ktama. Yet none of these activities seriously disturb the subsistence orientation
of rural life. Specialization of this sort supplements but never supplants agri-
culture. The abiding concern of all tribesmen is with their fields.

R
[13] "E. F. Heizer, "Aboriginal Fish Poisons," *Smithsonian Inst. Anthro. Papers*, 33 (1953), 263.
"C. S. Coon, *The Seven Caves: Archaeological Explorations in the Middle East* (New York:
Alfred Knopf, 1957), p. 45; E. Cecil Curwen, "Tangier Quern-Quarry," *Antiquity*, 119 (Sep-
tember, 1956), 174 and plate vii.

Livelihood

91

R
443 The introspective character of rural Morocco is enhanced by the weekly trading
438 market or *sug* (plural *aswaq*). These markets attract urban merchants, crafts-
439 men, and entrepreneurs, but their principal function is to serve as outlets for
171 the products of local specialization. One family comes to market with a basket
of figs, and another with a pannier of walnuts. After an interval of haggling,
each leaves with the specialty of the other. Exchange of this sort helps to add
variety to the diet, and encourages an intelligent appraisal of local conditions
of soil and climate. Staple foods seldom enter into this exchange. The goal of
each community is to be self-sufficient in breadstuff. A few commodities, such as
sugar, salt, tea, and kerosene, are imported from the cities, but the chief function
of the weekly market is to satisfy the modest wants of dispersed communities
engaged in subsistence agriculture.

R
443 Markets are held in the open, at predetermined sites that are deserted during
171 the rest of the week. In each tribal area one or more sites are reserved as market
[805] places and named as follows: *had* (Sunday), *tnine* (Monday), *tlata* (Tuesday),
arba (Wednesday), *khemis* (Thursday), *jema* (Friday), and *sebt* (Saturday)."
On the morning of the appointed day, streams of people converge on the market
place. The *sug* is much more than a market in the economic sense of the word;
it is also a social and political assembly of great importance in tribal life. Market
day is the time for legal transactions and all manner of negotiation. By night-
fall tribal authorities have resolved most of the problems of the week.

R
443 There is great variation in the size and influence of markets. In 1949 authori-
438 ties of the Spanish protectorate made a study of the volume of business transacted
171 at each *sug*. About a hundred markets were located; the annual volume of busi-
439 ness, including barter, averaged about 10,000,000 pesetas per market. About a
fourth of the markets had an annual business estimated at more than 65,000,000
pesetas (table 5). Most of the larger or regional markets are in the populous Rif
(fig. 24). In the sparsely settled area of Sanhaja as-Srair, only one market, Tlata
Ktama, serves as a trading center for more than one tribe. Khemis Izagan (pl.
[443] 7, b), with trade estimated at 3,000,000 pesetas, is typical of the smaller local
[438] markets.
[439]

Each market has four main functions: (1) distribution of local products,
(2) exchange of rural surpluses or specialties for urban goods, (3) circulation
of articles such as pottery and millstones from villages which specialize in making
them, and (4) dissemination of foreign imports. The larger markets differ from
the smaller in their greater emphasis on the latter two functions. Moreover, the
larger markets are usually located at the convergence of communication lines
and on the frontiers of complementary production zones."

EMIGRATION

Unfortunately, the weekly markets do not compensate for uneven distribution
of population and productive land. Few communities are able to accumulate

(TEXT CONTINUED ON PAGE 93)

"On French maps the names of the days of the week appear as *had*, *tnine*, *tlata*, *arba*, *khemis*,
djemaa, and *sebt*; on Spanish maps the usual spellings are *had*, *tenin*, *telata*, *arbaa*, *jemis*,
yumaa, and *sebt*.

"On the location and function of markets and the changes caused by recent improvement in
communications, see M. W. Mikesell, "The Role of Tribal Markets in Morocco," *Geog. Rev.*, 48
(1958), 494-511.